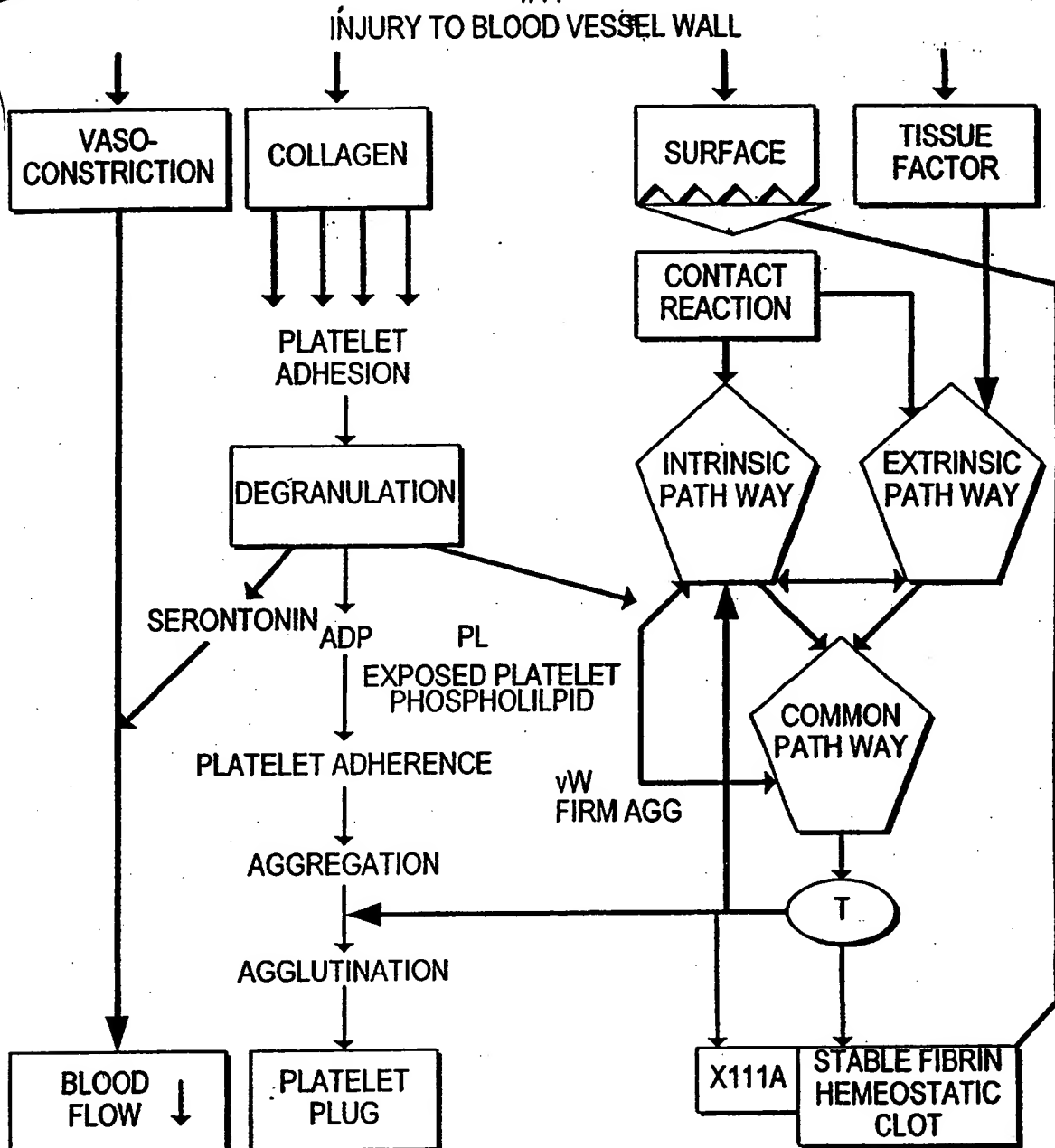




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THE END REACTIONS



REACTIONS REQUIRING CALCIUM

vW = von WILLEBRAND FACTOR

T = ACTIVATED THROMBIN

HEMOSTATIC REACTIONS.

FIG. 1A

```

graph TD
    TI[TISSUE AND BLOOD VESSEL INJURY] --> E[EXTRINSIC]
    TI --> I[INTRINSIC]
    TI --> V[VASOCONSTRICTION]
    
    E --> DT[DAMAGED TISSUE THROMBOPLASTIN FACTOR III]
    I --> PCE[POLYMER COLLAGEN EXPOSURE]
    
    DT --> A1[1) ACTIVATES TISSUE THROMBOPLASTIN VII]
    DT --> A2[2) ACCELERATES PROTHROMBIN THROMBIN EARLY THROMBIN]
    
    PCE --> XII[XII]
    XII --> XI[XI]
    XI --> IX[IX]
    IX --> X[X]
    
    A1 --> X
    A2 --> X
    
    X --> P[PROTHROMBIN II]
    P --> T[THROMBIN MOST THROMBIN INTRINSIC]
    
    T --> F[FIBRINOGEN CONCENTRATED AROUND POLYMER SPHERES]
    F --> XIII[XIII]
    XIII --> FI[FIBRIN]
    FI --> IFC[IRREVERSIBLE PLATELET-POLYMER FIBRIN CLOT]
    
    PCE --> P3[PF 3 PLATELET PROTHROMBIN ACTIVATOR]
    P3 --> XI
    
    PCE --> P3S[PF 3 PLATELET SURFACE]
    P3S --> X
    
    PCE --> P3V[V]
    P3V --> X
    
    PCE --> P3W[vWF]
    P3W --> X
    
    PCE --> P3X[X]
    P3X --> X
    
    PCE --> P3Y[Y]
    P3Y --> X
    
    PCE --> P3Z[Z]
    P3Z --> X
    
    PCE --> P3AA[ADP]
    P3AA --> P3AA
    
    PCE --> P3AT[THROMBASTHENIN]
    P3AT --> P3AT
    
    PCE --> P3CT[CLOT RETRACTION]
    P3CT --> P3CT
    
    PCE --> P3H[5 HYDROXY TRYPTAMINE]
    P3H --> P3H
    
    PCE --> P3P[PLATELET/POLYMER ADHESION AGGREGATE]
    P3P --> P3P
    
    PCE --> P3PR[PLATELET RELEASE]
    P3PR --> P3PR
    
    PCE --> P3F[5 HYDROXY TRYPTAMINE]
    P3F --> P3F
    
    PCE --> P3T[THROMBASTHENIN]
    P3T --> P3T
    
    PCE --> P3C[CLOT RETRACTION]
    P3C --> P3C
  
```

The diagram illustrates the blood clotting cascade, starting from **TISSUE AND BLOOD VESSEL INJURY**. This event triggers three main pathways: **EXTRINSIC**, **INTRINSIC**, and **VASOCONSTRICTION**.

- EXTRINSIC Pathway:** Initiated by **DAMAGED TISSUE THROMBOPLASTIN (FACTOR III)**, it leads to **1) ACTIVATES TISSUE THROMBOPLASTIN (VII)** and **2) ACCELERATES PROTHROMBIN THROMBIN (EARLY THROMBIN)**. These steps lead to the activation of **Factor X**.
- INTRINSIC Pathway:** Initiated by **POLYMER COLLAGEN EXPOSURE**, it leads to the activation of **Factor XII** to **XII ACTIVE (+) CHARGE**, which then activates **Factor XI** to **XI**, and finally **Factor IX** to **IX**. **IX** then activates **Factor X**.
- VASOCONSTRICTION Pathway:** Leads to the release of **5 HYDROXY TRYPTAMINE** and **ADP**.

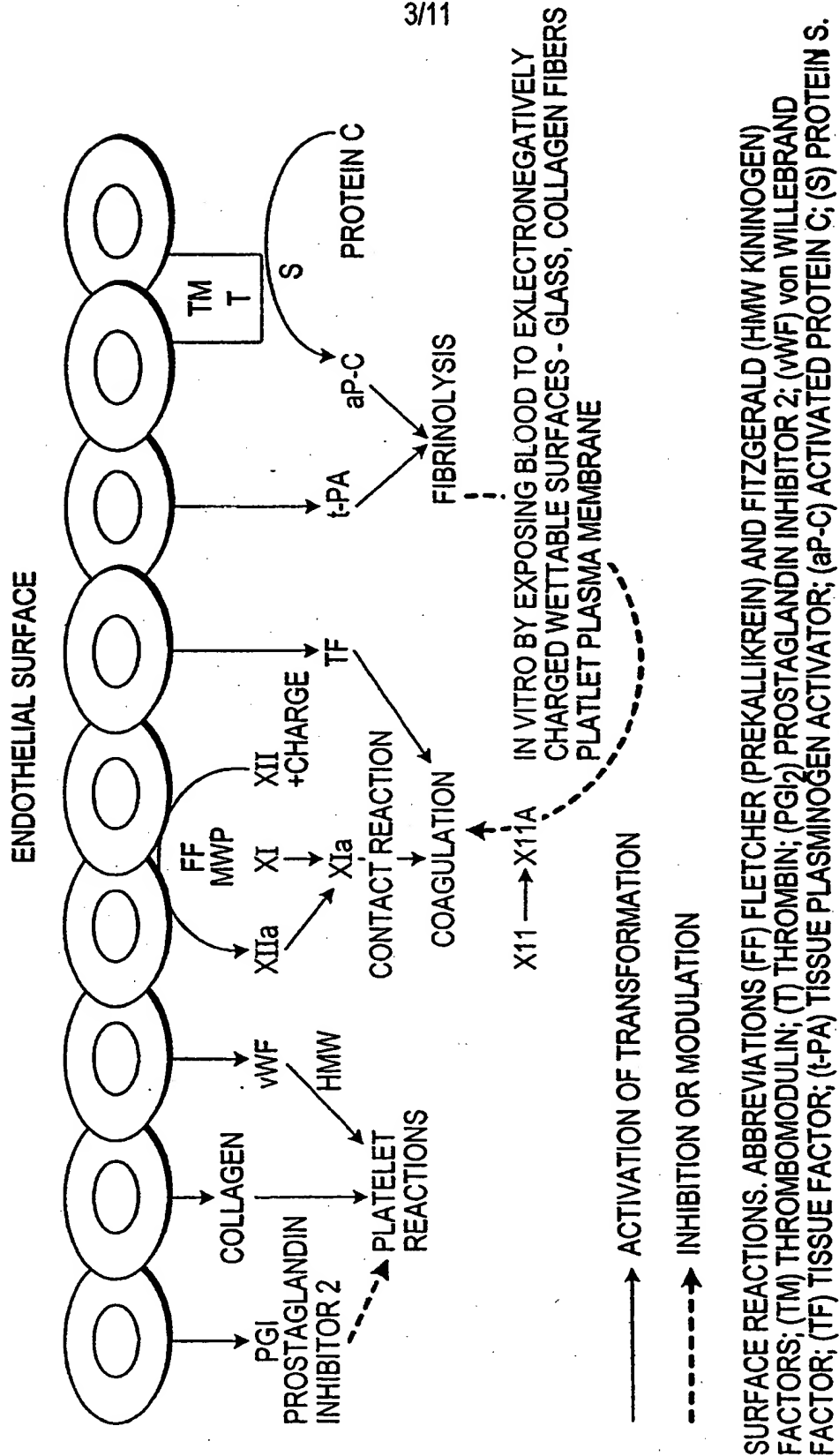
**Factor X** is the central activator, leading to the conversion of **PROTHROMBIN (II)** to **THROMBIN (MOST THROMBIN INTRINSIC)**. **THROMBIN** then converts **FIBRINOGEN (CONCENTRATED AROUND POLYMER SPHERES)** to **FIBRIN** via **Factor XIII**. **FIBRIN** leads to the formation of an **IRREVERSIBLE PLATELET-POLYMER FIBRIN CLOT**.

**Platelet/Polymer Interaction:** **POLYMER COLLAGEN EXPOSURE** also leads to **PLATELET/POLYMER ADHESION AGGREGATE** and **PLATELET RELEASE**, which releases **ADP** and **5 HYDROXY TRYPTAMINE**. **ADP** leads to **FURTHER AGGREGATION PRIMARY HEMOSTATIC PLUG (REVERSIBLE) PLATELET/POLYMER**, which then leads to the **IRREVERSIBLE PLATELET-POLYMER FIBRIN CLOT**.

**Fibrinolysis and Clot Retraction:** **THROMBIN** also leads to the activation of **PLASMINOGEN** to **PLASMIN** (via **PLASMINOGEN ACTIVATOR**). **PLASMIN** leads to **FIBRINOGEN FIBRIN DEGRADATION PRODUCTS** and **THROMBASTHENIN CLOT RETRACTION**.

**FIG. 1B**

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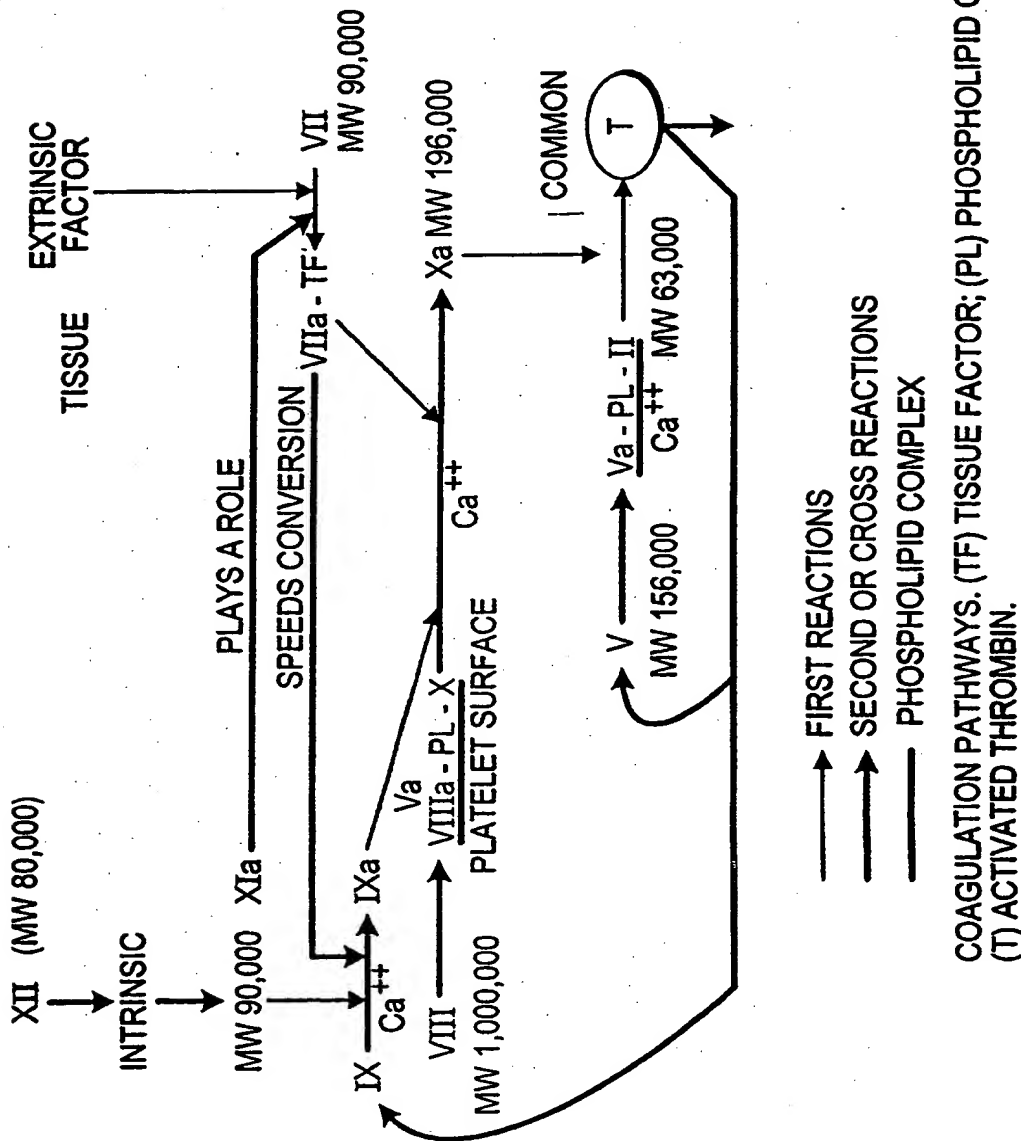


FIG. 3

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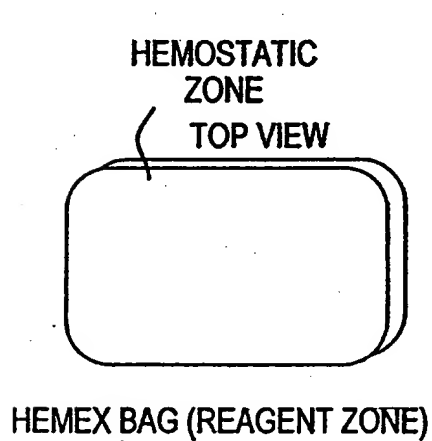


FIG. 4A

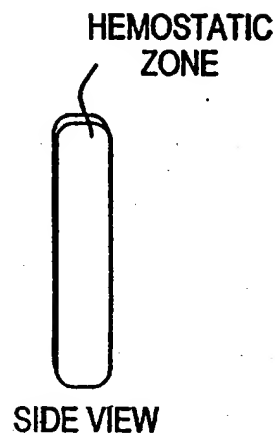


FIG. 4B

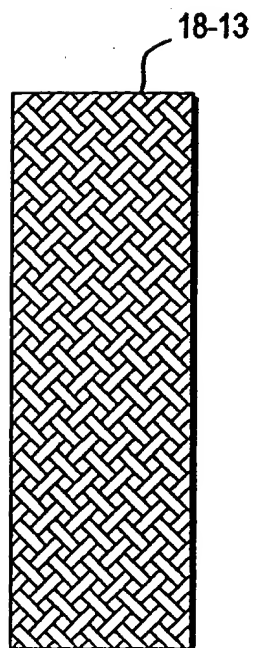


FIG. 5A

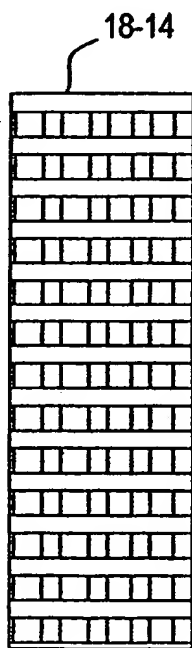


FIG. 5B

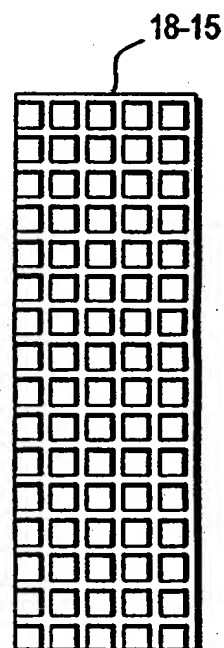


FIG. 5C

ENLARGED VIEWS OF COVERING  
SEPARATION MATERIAL  
(EXAMPLES OF DIFFERENT MATRIX TEXTURES)

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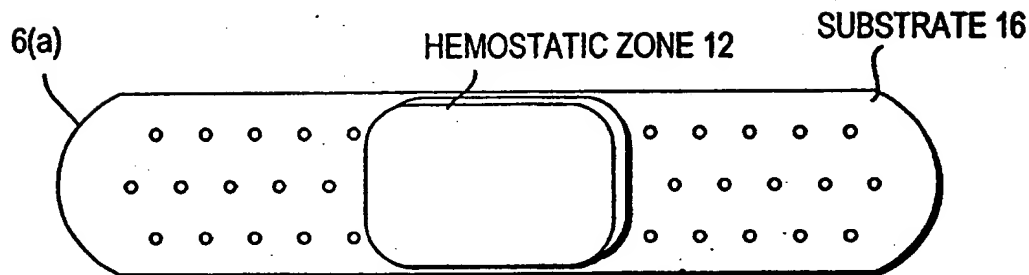
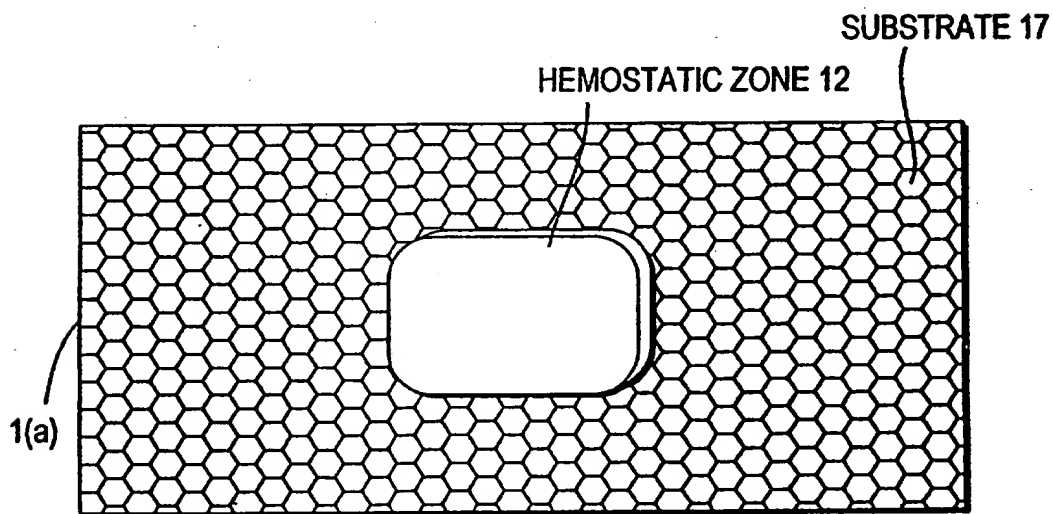


FIG. 6A



HEMEX BAG (REAGENT ZONE) ON ADHESIVE BACKING

FIG. 6B

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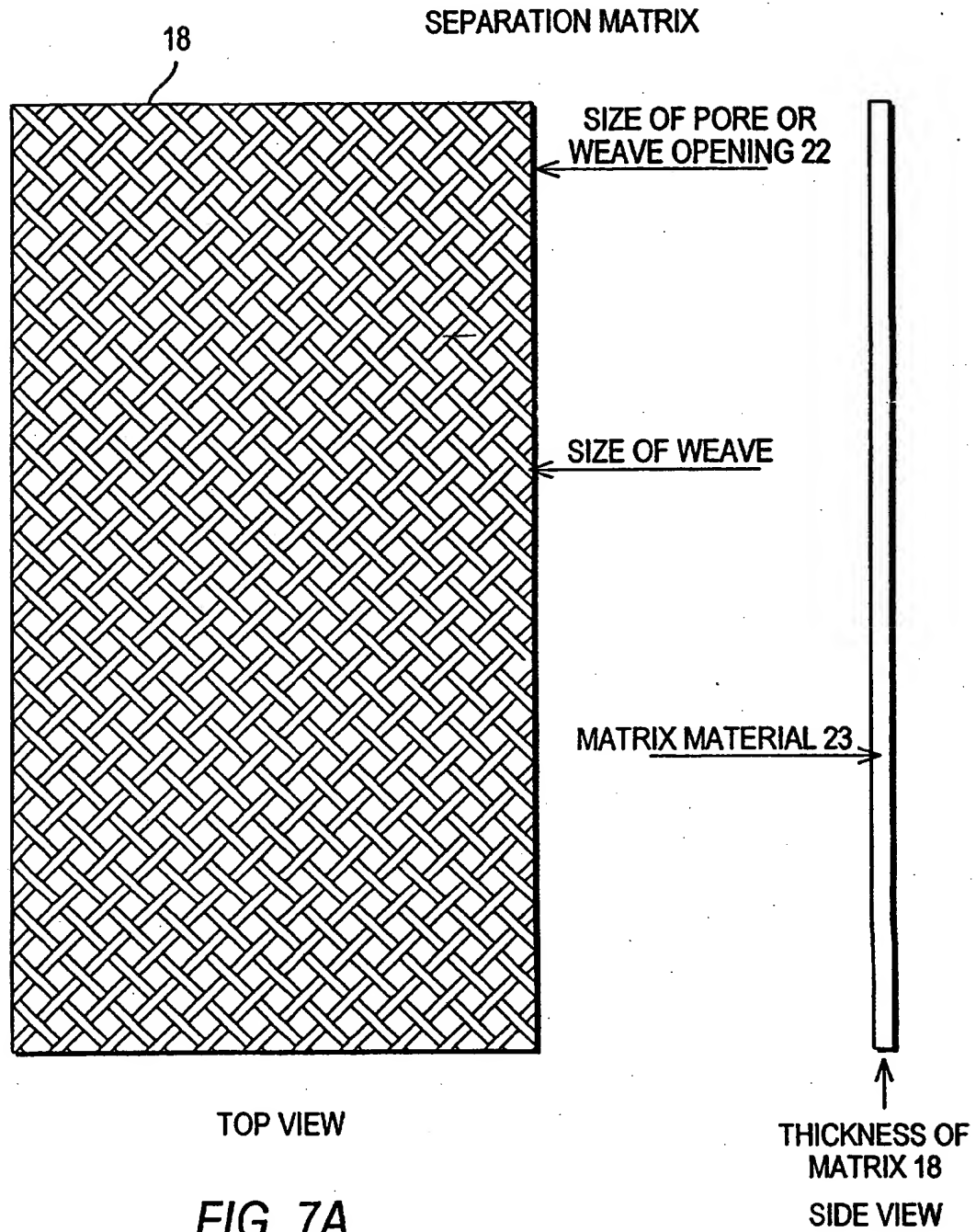
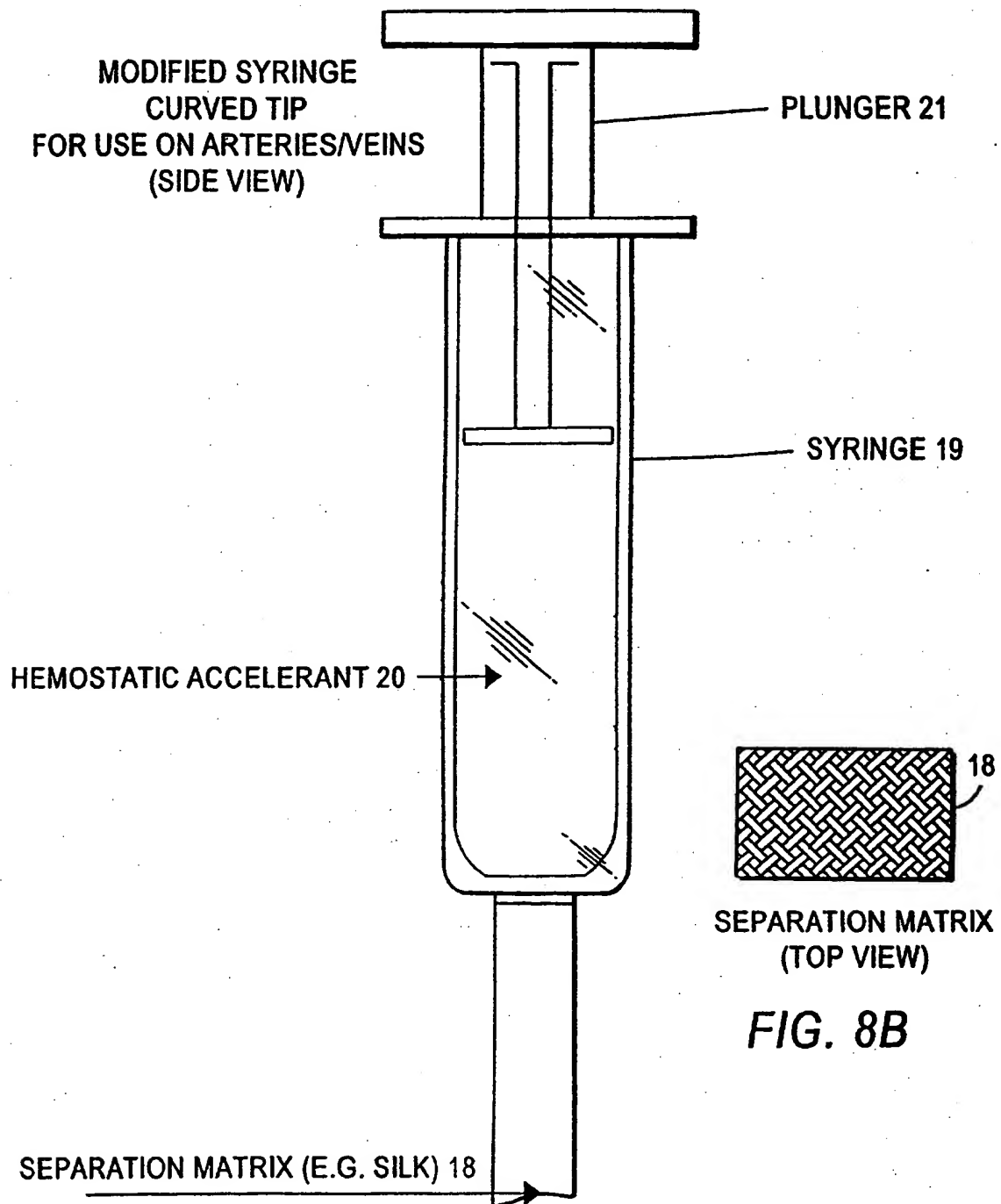


FIG. 7A

FIG. 7B

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**FIG. 8A**

**FIG. 8B**



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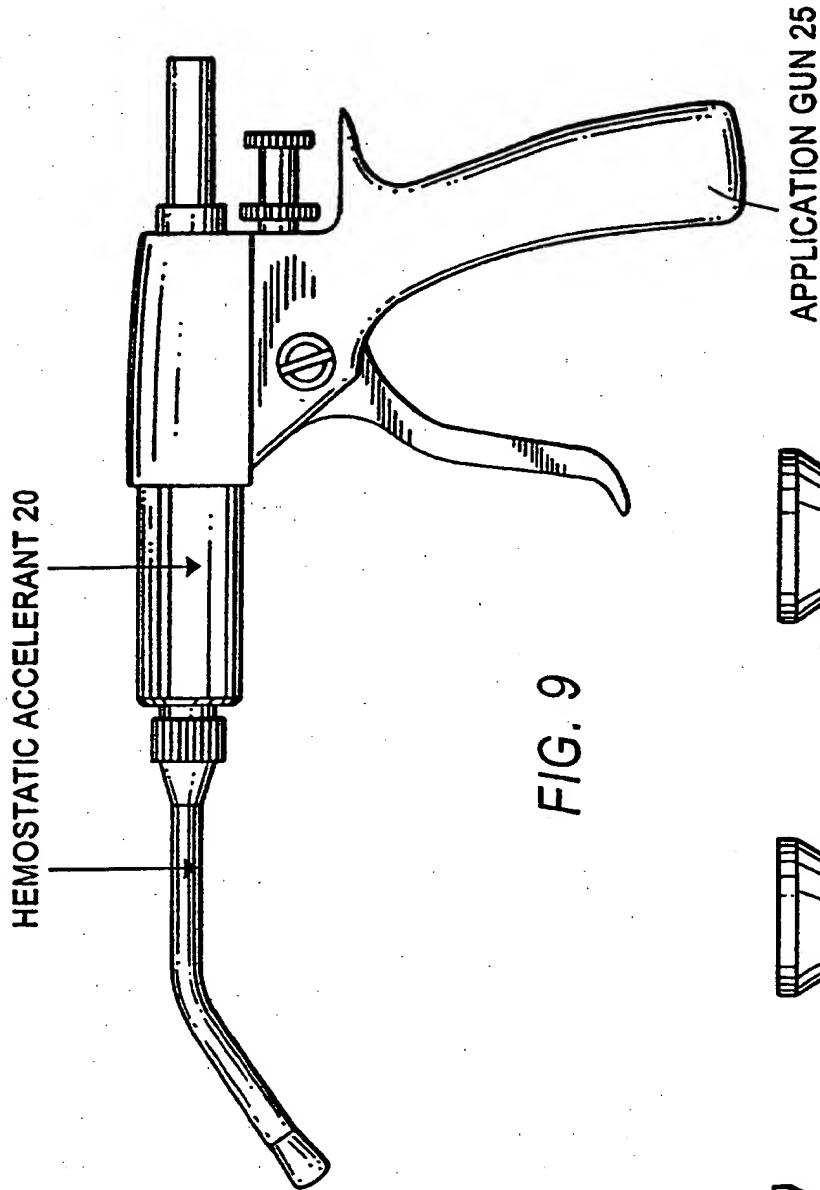


FIG. 9

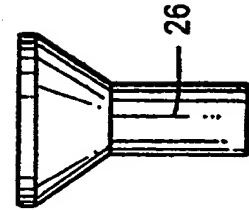


FIG. 9C

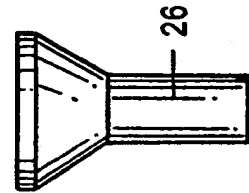


FIG. 9B

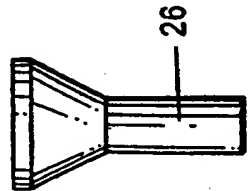
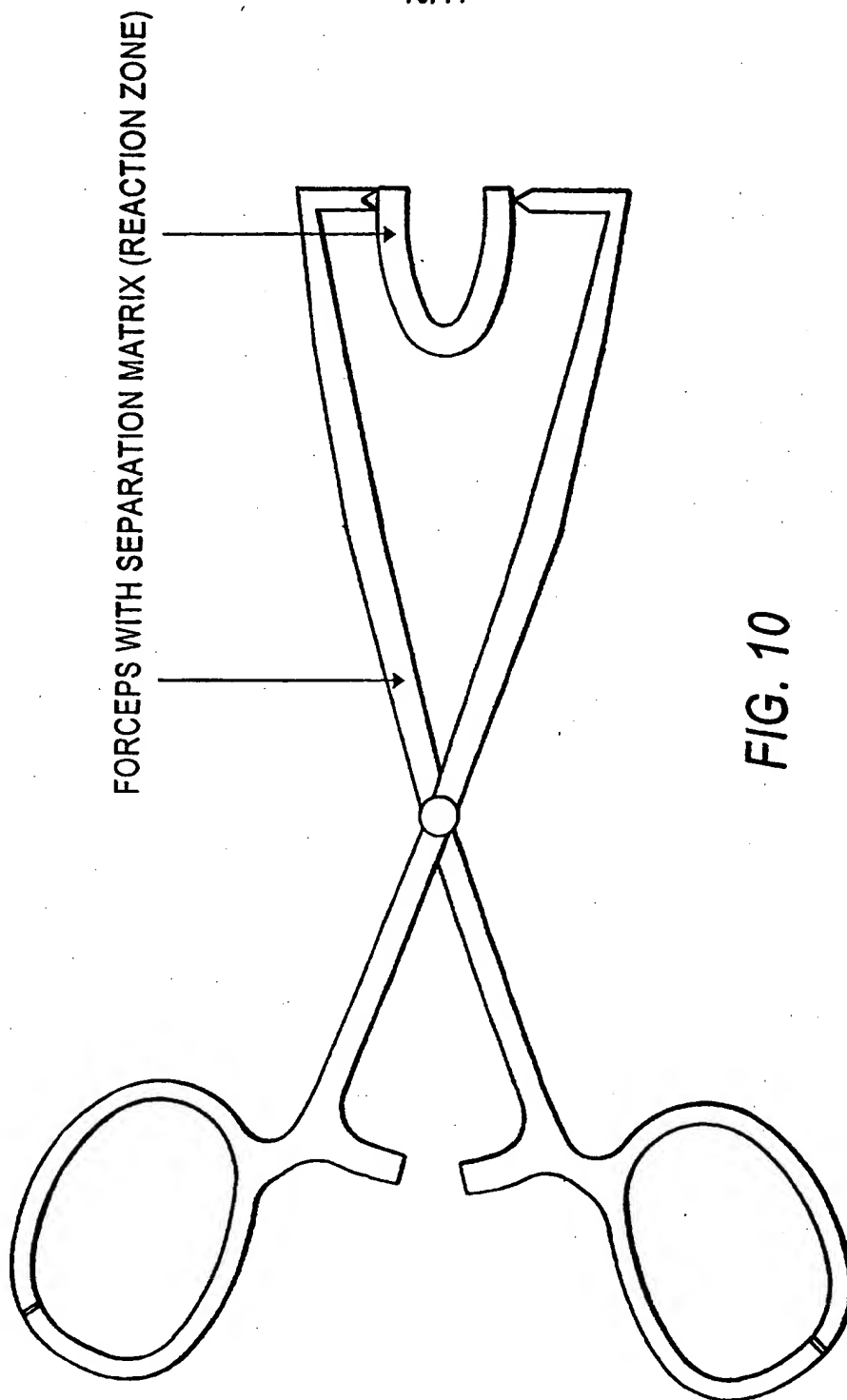


FIG. 9A

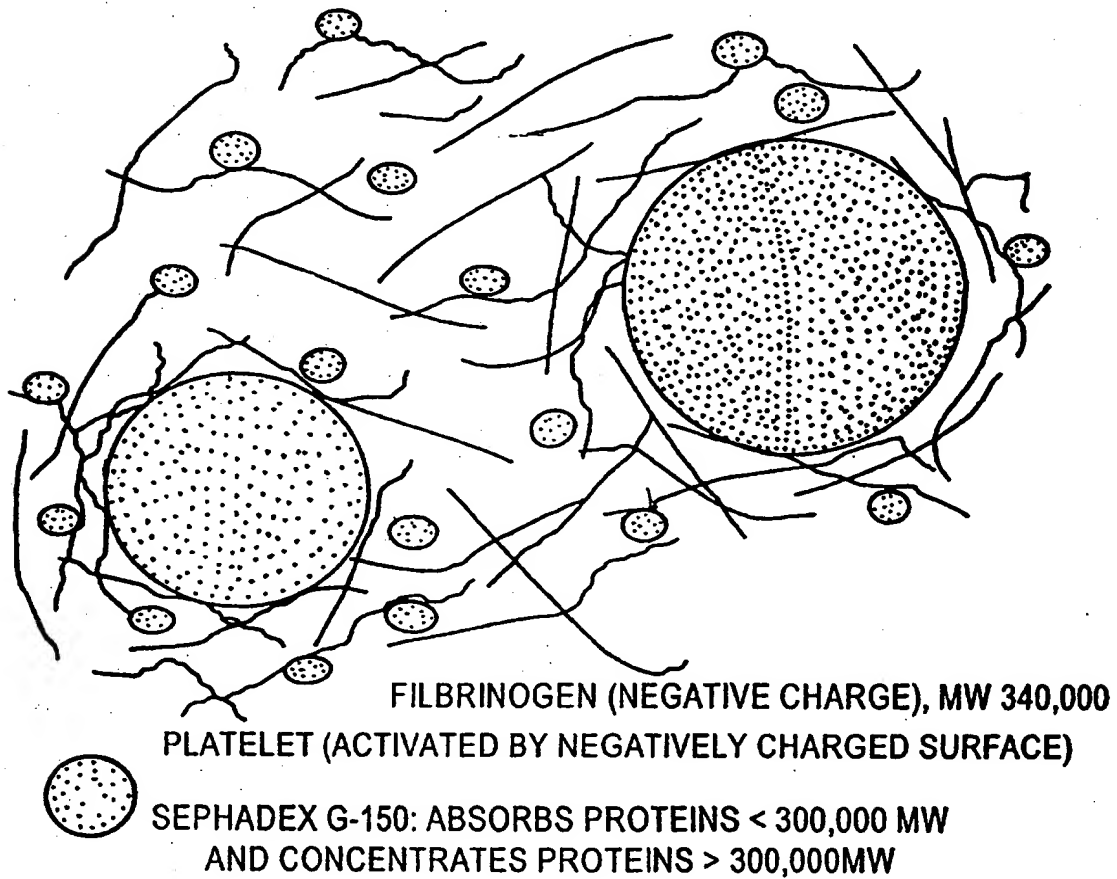
(TOP VIEW OF SPREADER TIPS)

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**PLATELET ACTIVATION BY THE IONIC CONCENTRATION OF  
FIBRINOGEN ON THE SURFACE OF**



**FIG. 11**